

WHAT IS CLAIMED IS:

1. A method of treatment of refractive errors of an eye, the eye including a central visual axis and a cornea with a first corneal layer overlying a second corneal layer, comprising the steps of:

separating a first surface of the first corneal layer from a second surface of the second corneal layer, thereby forming a flap and exposing the second surface;

implanting on the second surface an inlay adapted to correct a refractive error of the eye;

coating a surface of the inlay with a compound that promotes bonding with the cornea; and

replacing the flap over the inlay.

2. A method according to claim 1, wherein the coating step takes place before the implanting step.

3. A method according to claim 1, wherein the coating step takes place after the implanting step.

4. A method according to claim 1, wherein the first corneal layer is the epithelium.

5. A method according to claim 1, wherein the second corneal layer is the stroma.

6. A method according to claim 1, further comprising the step of:  
drying the compound coating on the surface of the inlay and thereby forming a drape on the inlay.

7. A method according to claim 4, wherein

the drying step comprises applying ultraviolet light to the compound and crosslinking the compound.

8. A method according to claim 1, further comprising the step of coating the exposed second surface adjacent the inlay with the compound for bonding the inlay to the exposed second surface of the second corneal layer.

9. A method according to claim 8, further comprising the step of drying the compound coating on the exposed second surface and thereby forming a drape on the inlay and bonding the inlay to the exposed second surface.

10. A method according to claim 9, wherein the drying step comprises applying ultraviolet light to the compound.

11. A method according to claim 1, wherein the compound is an organic polymer.

12. A method according to claim 11, wherein the compound is formed of one of the group consisting of fibronectin, collagen, vitronectin, and polysaccande.

13. A method according to claim 1, further comprising the step of: ablating the inlay prior to coating the surface of the inlay with the compound.

14. A method according to claim 1, wherein the inlay is organic.

15. A method according to claim 14, wherein

the inlay is formed of one of the group consisting of laminin, collagen, and vitronectin.

16. A method according to claim 1, wherein the inlay is synthetic.

17. A method according to claim 16, wherein the inlay is formed of one of the group consisting of silicone, hydrogel and hilafilcon.

18. A method according to claim 1, wherein the inlay is a mixture of organic and synthetic materials.

19. A method according to claim 1, wherein the coating step comprises substantially enclosing the inlay.

20. A method according to claim 19, wherein the coating step comprises substantially enclosing the inlay in a membrane.

21. A method according to claim 20, wherein the membrane is made of amniotic material.

22. A method according to claim 1, wherein the inlay is formed using diffractive technology.

23. A method according to claim 1, wherein the coating step comprises coating a second surface of the inlay.

24. A method according to claim 23, wherein the coating step comprises coating a third surface of the inlay.

25. A method of treatment of refractive errors of an eye, the eye including a central visual axis and a cornea with a first corneal layer overlying a second corneal layer, comprising the steps of:

separating a first surface of the first corneal layer from a second surface of the second corneal layer, thereby exposing the second surface;

implanting on the second surface an inlay adapted to correct a refractive error of the eye;

coating a surface of the inlay after implanting the inlay with a compound that promotes bonding with the cornea;

coating the exposed second surface adjacent the inlay with the compound; and

drying the compound coating the inlay and the exposed second surface, thereby forming a drape over the inlay and bonding the inlay to the second surface.

26. A method according to claim 25, further comprising the step of replacing the first surface of the first corneal layer over the inlay and the second surface of the second corneal layer.

27. A method according to claim 25, wherein the drying step comprises applying ultraviolet light to the compound.

28. A method according to claim 25, wherein the first corneal layer is the epithelium.

29. A method according to claim 25, wherein the second corneal layer is the stroma.